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## PART VI.

### On the family of *Piperaceæ*; by C. Kunth.

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C. Walk cover'd with Glaß	O. Curators House.
D. Conservatory & Winter Garden upon raised Terraces.	P. Reservoir belonging to the Crown
E. Agricultural Department.	Q. British Plants & Rockwork.
F. Geographical arrangement.	R. Nursery
G. Plants used in the Arts Manufactures &c.	S.S.S. Yards for Sheds Stables &o
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Mr. G. T. Lay read the following account of the habits of a Bird of Paradise, *Paradisea apoda*, Linn.:---

"This bird has been in the possession of Mr. Beale upwards of fourteen years, and seemed when I left China at the commencement of the past year to be in full health and vigour. It is fed mainly upon boiled rice, with a few grasshoppers, as meat with its vegetables. These it eats whole when small, but pulls off the legs and wings when large. The tip of the abdomen, with the lower intestine, are rejected, while the rest of the viscera are devoured as a sort of choice morsel. It seizes the insect near its head with so firm a gripe, that life is soon extinct, which answers the double purpose of securing its prey and of shortening the dying throes of the poor victim. It is very careful to cleanse its bill after every such operation, wiping it upon the perch, and shaking it with a peculiar jerk. Ι have heard one remark that it is not a clean feeder, but this is true only of the mode of eating, which is gross and eager, as the largeness of the mouthful is incompatible with much grace or nicety in conveying the food to the place of its destination.

"The voice is loud and sonorous when he calls in a rapid succession of notes. This is probably the strain in which he answers his fellows in the wild state, and may be heard, from its clearness, a great distance, where walls and dwellings do not interfere with the pulsations. When you approach his cage he often treats you with a ditty, which I have called in my memorandum 'the song of solicitation.' It is short, but very pleasing, and not a little curious, for the notes are repeated in harmonic progression.

# " The Serenade of Beale's bird.



"The first four notes are very exactly intonated, very clear, and very sweet. The three last are repeated in a kind of caw, a very high refinement of the voices of a daw or a crow, yet possessing a striking resemblance. And this suggests a lively affinity between the crows and the paradise birds. While this serenade is uttered, the black pupil, encircled by a golden iris, waxes or wanes, as the creature wishes to contemplate more distant or nearer objects. The bill snaps as the prelude of a meal and the token of appetite, while the body is conveyed from side to side by the highest and most easy springs. The crow and its congeners love to range upon the ground. by side, and watched their specific differences with great care and attention. Mr. Thomas Sansom exhibited a proliferous specimen of *Polytrichum commune*, in which a second stem was developed in the place of the stalk bearing the fructification.

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"The form and disposition of the pennons afford it the power of floating gracefully upon the breeze, not of cutting the air in rapid flight. The ease with which it glides upon the auræ must be increased by the hypochondrial feathers, which are lifted up and displayed in the act of flying. The hypochondrial feathers are yellow at the base, whitening towards the end, with brown shafts. The shortness of the vanes makes them resemble the teeth of a saw near the end. The tail-coverts with long toothed shafts. The feet and legs are of a dark leaden blue. They are strong, and grasp the perch with great ease and firmness."

Mr. Fraser pointed out the characters of several new species of Humming-birds, which had been placed in his hands by the Earl of Derby for that purpose, and that they might be exhibited at one of the Society's scientific meetings. These birds were obtained at S<sup>ta</sup> Fé de Bogota, and the collection contained eighteen species, a great portion of which being undescribed, were thus characterized :—

TROCHILUS EXORTIS. T. rostro quàm caput paululàm longiore; cauda nigrescente, latissima, subfurcata; colore viridi; pectore cæruleo enitente; macula frontali splendide viridi; lacinid gulari purpurascenti-rubra nitore cæruleo; menti plumis cæruleis; crisso albo.

Long. tot. 4 unc.; rostri,  $\frac{3}{4}$ ; alæ,  $2\frac{1}{2}$ ; caudæ,  $2\frac{1}{8}$ . Hab. Guaduas, Columbia.

This species is of moderate size; the general colour of its plumage is deep rich green, with bronze reflections; the wings are dusky, with the upper and under coverts of the same green tint as the body: the two central tail-feathers are tinted with bronze, both above and beneath; the remaining tail-feathers, which are broad, are black, but in certain lights a very obscure purplish-green hue is observable; the feathers on the forehead are more compact than the remaining feathers of the head; in some lights they appear to be of a black colour, edged with green; in others they exhibit a most brilliant green lustre.

TROCHILUS CUPREO-VENTRIS. T. rostro quàm caput paululàm longiore; cauda brevi, subfurcatâ: femoribus albis; colore splendidè viridi, aureo et cupreo enitente; crisso purpurascenti-cœruleo; primariis nigrescentibus; cauda nigra, purpureo tincta. Long. tot. 4<sup>3</sup>/<sub>4</sub> unc.; rostri, 1; alæ, 2<sup>3</sup>/<sub>8</sub>; caudæ, 1<sup>7</sup>/<sub>4</sub>.

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TROCHILUS EXORTIS. T. rostro quàm caput paululàm longiore; cauda nigrescente, latissima, subfurcata; colore viridi; pectore cæruleo enitente; macula frontali splendide viridi; lacinid gulari purpurascenti-rubra nitore cæruleo; menti plumis cæruleis; crisso albo.

Long. tot. 4 unc.; rostri,  $\frac{3}{4}$ ; alæ,  $2\frac{1}{2}$ ; caudæ,  $2\frac{1}{8}$ . Hab. Guaduas, Columbia.

This species is of moderate size; the general colour of its plumage is deep rich green, with bronze reflections; the wings are dusky, with the upper and under coverts of the same green tint as the body: the two central tail-feathers are tinted with bronze, both above and beneath; the remaining tail-feathers, which are broad, are black, but in certain lights a very obscure purplish-green hue is observable; the feathers on the forehead are more compact than the remaining feathers of the head; in some lights they appear to be of a black colour, edged with green; in others they exhibit a most brilliant green lustre.

TROCHILUS CUPREO-VENTRIS. T. rostro quàm caput paululàm longiore; cauda brevi, subfurcatâ: femoribus albis; colore splendidè viridi, aureo et cupreo enitente; crisso purpurascenti-cœruleo; primariis nigrescentibus; cauda nigra, purpureo tincta. Long. tot. 4<sup>3</sup>/<sub>4</sub> unc.; rostri, 1; alæ, 2<sup>3</sup>/<sub>8</sub>; caudæ, 1<sup>7</sup>/<sub>4</sub>.

This species is remarkable for the richness of its colouring; in

as having feet formed for walking, but the Paradise Bird shuns the bottom of the cage, as if afraid of soiling its delicate plumage; for I must observe, that it is always as clean and wemless as it is gay and splendid. The Creator, who has poured so much beauty upon it, has also endowed it with an instinct to delight in these charms, and with wisdom to preserve them in their fullest integrity. In the wild state it is not unlikely that they catch their prey upon the wing, either by taking it in flight, like the swallow, or by darting upon it, like the Drongo Shrike, as it passes by the seat of its pursuer.

"The form and disposition of the pennons afford it the power of floating gracefully upon the breeze, not of cutting the air in rapid flight. The ease with which it glides upon the auræ must be increased by the hypochondrial feathers, which are lifted up and displayed in the act of flying. The hypochondrial feathers are yellow at the base, whitening towards the end, with brown shafts. The shortness of the vanes makes them resemble the teeth of a saw near the end. The tail-coverts with long toothed shafts. The feet and legs are of a dark leaden blue. They are strong, and grasp the perch with great ease and firmness."

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This species is remarkable for the richness of its colouring; in

certain lights it appears as if it were powdered with gold and coppercoloured particles; the coppery hue prevails most on the belly; and the upper tail-coverts are of a purer green than other parts.

Another blue-vented and white-thighed Humming-bird was described under the name of

**TROCHILUS UROPYGIALIS.** T. rostro quàm caput longiore; caudá mediocri, furcatá: colore corporis intensè viridi, aureo relucente; rectricibus caudæ fulgidè aureo-viridibus; gulá crissoque ex purpureo splendidè cæruleis; abdomine nitidè viridi; alis nigrescentibus; caudá ex purpureo atrá; plumis femoralibus albis, laxis.

In the female the throat and chest are somewhat rusty, with green spots, and the feathers on the belly are variegated with whitish.

This species is about the same size, and in many respects resembles the *T. cupreo-ventris*, but differs in having the general colour less brilliant, whilst the feathers of the belly and the upper tailcoverts are more brilliant, and present that compact striated appearance which is always observable in those feathers which give that extreme brilliancy to different parts of these birds: it differs, moreover, in having a blue throat, and the belly, instead of being cupreous, is bluish-green. The upper tail-coverts in *T. cupreo-ventris* are of the same loose character as those on the back.

TROCHILUS CORUSCUS. T. rostro brevi; caudd latissimd, subfurcatd, ex æneo fuscd: corpore suprà, capiteque viridibus nitore aureo; tectricibus caudæ cupreis; primariis purpurascentibus; corpore subtùs viridescente, fuscescenti-ochreo, præsertim ad crissum, tincto; lined gulari, ad pectus tendente nitidè viridi, apice purpurascenti-rubro.

Long. tot.  $5\frac{1}{4}$  unc.; rostri,  $\frac{3}{4}$ ; alæ,  $2\frac{7}{8}$ ; caudæ,  $2\frac{1}{8}$ .

Beak about equal to the head in length; tail slightly forked, the feathers *very* broad; general colour of upper parts green, with golden reflections, upper tail-coverts coppery; under parts dull brownish-green; tail-feathers above and beneath rich bronze, with golden brown reflections; primaries dusky, with purple reflections: a stripe, extending from the chin to the chest, is composed of compact brilliant feathers; those on the chin and throat are green, and those beyond are purplish-red, exhibiting bluish reflections; under tail-coverts brownish-yellow; some of the feathers are whitish; the feathers on the edge of the shoulders are varied with brownishochre.

The female is deficient of the flame-like mark on the throat.

**TROCHILUS BRACHYRHYNCHUS.** T. rostro quàm caput breviore; caudá brevi, nigro, cupreo et æneo subnitente; rectricibus utrinque duabus externis cæteris paululàm præstantibus, et ad apicem albis: corpore suprà, ex aureo viridi, corpore subtàs albo (interdàm flavido lavato), maculis ex aureo viridibus ornato; primariis purpurascentibus.

Long. tot.  $3\frac{5}{12}$  unc.; rostri,  $\frac{1}{3}$ ; alæ,  $1\frac{7}{8}$ ; caudæ,  $1\frac{7}{12}$ .

In one specimen there is a rufous tint on the upper tail-coverts;

certain lights it appears as if it were powdered with gold and coppercoloured particles; the coppery hue prevails most on the belly; and the upper tail-coverts are of a purer green than other parts.

Another blue-vented and white-thighed Humming-bird was described under the name of

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In the female the throat and chest are somewhat rusty, with green spots, and the feathers on the belly are variegated with whitish.

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TROCHILUS CORUSCUS. T. rostro brevi; caudd latissimd, subfurcatd, ex æneo fuscd: corpore suprà, capiteque viridibus nitore aureo; tectricibus caudæ cupreis; primariis purpurascentibus; corpore subtùs viridescente, fuscescenti-ochreo, præsertim ad crissum, tincto; lined gulari, ad pectus tendente nitidè viridi, apice purpurascenti-rubro.

Long. tot.  $5\frac{1}{4}$  unc.; rostri,  $\frac{3}{4}$ ; alæ,  $2\frac{7}{8}$ ; caudæ,  $2\frac{1}{8}$ .

Beak about equal to the head in length; tail slightly forked, the feathers *very* broad; general colour of upper parts green, with golden reflections, upper tail-coverts coppery; under parts dull brownish-green; tail-feathers above and beneath rich bronze, with golden brown reflections; primaries dusky, with purple reflections: a stripe, extending from the chin to the chest, is composed of compact brilliant feathers; those on the chin and throat are green, and those beyond are purplish-red, exhibiting bluish reflections; under tail-coverts brownish-yellow; some of the feathers are whitish; the feathers on the edge of the shoulders are varied with brownishochre.

The female is deficient of the flame-like mark on the throat.

**TROCHILUS BRACHYRHYNCHUS.** T. rostro quàm caput breviore; caudá brevi, nigro, cupreo et æneo subnitente; rectricibus utrinque duabus externis cæteris paululàm præstantibus, et ad apicem albis: corpore suprà, ex aureo viridi, corpore subtàs albo (interdàm flavido lavato), maculis ex aureo viridibus ornato; primariis purpurascentibus.

Long. tot.  $3\frac{5}{12}$  unc.; rostri,  $\frac{1}{3}$ ; alæ,  $1\frac{7}{8}$ ; caudæ,  $1\frac{7}{12}$ .

In one specimen there is a rufous tint on the upper tail-coverts;

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Another blue-vented and white-thighed Humming-bird was described under the name of

**TROCHILUS UROPYGIALIS.** T. rostro quàm caput longiore; caudá mediocri, furcatá: colore corporis intensè viridi, aureo relucente; rectricibus caudæ fulgidè aureo-viridibus; gulá crissoque ex purpureo splendidè cæruleis; abdomine nitidè viridi; alis nigrescentibus; caudá ex purpureo atrá; plumis femoralibus albis, laxis.

In the female the throat and chest are somewhat rusty, with green spots, and the feathers on the belly are variegated with whitish.

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Long. tot.  $5\frac{1}{4}$  unc.; rostri,  $\frac{3}{4}$ ; alæ,  $2\frac{7}{8}$ ; caudæ,  $2\frac{1}{8}$ .

Beak about equal to the head in length; tail slightly forked, the feathers *very* broad; general colour of upper parts green, with golden reflections, upper tail-coverts coppery; under parts dull brownish-green; tail-feathers above and beneath rich bronze, with golden brown reflections; primaries dusky, with purple reflections: a stripe, extending from the chin to the chest, is composed of compact brilliant feathers; those on the chin and throat are green, and those beyond are purplish-red, exhibiting bluish reflections; under tail-coverts brownish-yellow; some of the feathers are whitish; the feathers on the edge of the shoulders are varied with brownishochre.

The female is deficient of the flame-like mark on the throat.

**TROCHILUS BRACHYRHYNCHUS.** T. rostro quàm caput breviore; caudá brevi, nigro, cupreo et æneo subnitente; rectricibus utrinque duabus externis cæteris paululàm præstantibus, et ad apicem albis: corpore suprà, ex aureo viridi, corpore subtàs albo (interdàm flavido lavato), maculis ex aureo viridibus ornato; primariis purpurascentibus.

Long. tot.  $3\frac{5}{12}$  unc.; rostri,  $\frac{1}{3}$ ; alæ,  $1\frac{7}{8}$ ; caudæ,  $1\frac{7}{12}$ .

In one specimen there is a rufous tint on the upper tail-coverts;

in another there are several purple feathers irregularly scattered with the ordinary golden green ones on the back; perhaps in the adult bird this purple is the prevailing colour of the back.

This small-sized species is remarkable for the shortness of its beak, which is acutely pointed, and a little dilated in the middle.

TROCHILUS DERBIANUS. T. rostro recurvo, quoad longitudinem, corpus cum capite æquiparante; cauda mediocri, paululùm furcata: colore viridi, corpore subtùs albido variegato; gula nigrescente. & Long. tot. 8 unc.; rostri, 3<sup>3</sup>/<sub>8</sub>; alæ, 3; caudæ, 2<sup>1</sup>/<sub>4</sub>.

Bill immensely long, and somewhat recurved, equal in length to the head and body; tail moderate, slightly forked; head and upper parts of body green, with golden and bronze reflections; wings purplish-black; tail blackish, tinted with bronze, the central feathers being the richest; chin and throat dusky, each feather very obscurely tinted with bronze in the middle, and edged with ashy-white; belly and vent green; the feathers edged with white, or in parts greyish, those on the chest are whitish, with a large green spot near the apex; under wing-coverts green.

The female has a shorter beak; and there is more white on the under parts of the body; the feathers on the throat and chin are somewhat variegated with yellowish.

TROCHILUS AURÒGASTER, Loddiges' MSS. T. rostro ferè duplo quàm caput longiore; caudá mediocriter latá et furcatá; plumis corporis permagnis, et suprà et subtàs: colore splendidè viridi; tectricibus caudæ plumisque abdominis, nitidè aureo relucentibus; notá gulari purpureo-cæruleá, necnon apud frontem notá, luce favente, gramineo-viridi; crissi plumis aureo-viridibus, ferrugineo marginatis; alarum primariis fuscescenti-nigris non sine æneo nitore; caudá ex-aureo-æneo-viridi.

In the female the throat is of a rusty yellow tint, and is sparingly spotted with green; the belly and vent are of an ochreous colour, with heart-shaped green spots; on the former the green predominates, and on the under tail-coverts the yellowish tint prevails.

This species is of moderate size; that portion of the under mandible which shuts into the upper one is white.

TROCHILUS FUSCICAUDATUS. T. rostro quàm caput longiore; cauda subrotundata: colore ex aureo viridi; plumis gulæ, pectoris, et abdominis, albido marginatis; plumis analibus albis; crisso fusco, rectricibus caudæ submetallicè castaneis, nigrescente marginatis; remigibus alarum nigrescentibus, purpureo paululùm relucentibus; mandibula inferiore (apice excepto), necnon superioris basi, pallidè fuscis.

Long. tot. 4 unc.; rostri,  $\frac{7}{8}$ ; alæ, 2; caudæ,  $1\frac{1}{2}$ . Hab. Chachapayas, Peru.

TROCHILUS CYANOFTERUS, Loddiges' MSS. Tr. rostro quàm caput multo longiore; caudá latissimá et leviter furcatá : colore intensè viridi, ad nigrum híc atque illíc vergente, præsertim apud caput; in another there are several purple feathers irregularly scattered with the ordinary golden green ones on the back; perhaps in the adult bird this purple is the prevailing colour of the back.

This small-sized species is remarkable for the shortness of its beak, which is acutely pointed, and a little dilated in the middle.

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Bill immensely long, and somewhat recurved, equal in length to the head and body; tail moderate, slightly forked; head and upper parts of body green, with golden and bronze reflections; wings purplish-black; tail blackish, tinted with bronze, the central feathers being the richest; chin and throat dusky, each feather very obscurely tinted with bronze in the middle, and edged with ashy-white; belly and vent green; the feathers edged with white, or in parts greyish, those on the chest are whitish, with a large green spot near the apex; under wing-coverts green.

The female has a shorter beak; and there is more white on the under parts of the body; the feathers on the throat and chin are somewhat variegated with yellowish.

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Long. tot. 4 unc.; rostri,  $\frac{7}{8}$ ; alæ, 2; caudæ,  $1\frac{1}{2}$ . Hab. Chachapayas, Peru.

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Long. tot. 4 unc.; rostri,  $\frac{7}{8}$ ; alæ, 2; caudæ,  $1\frac{1}{2}$ . Hab. Chachapayas, Peru.

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